

UINTA BASIN STRATEGY

Internal -- Deliberative

2016-008149-0010470

Framework

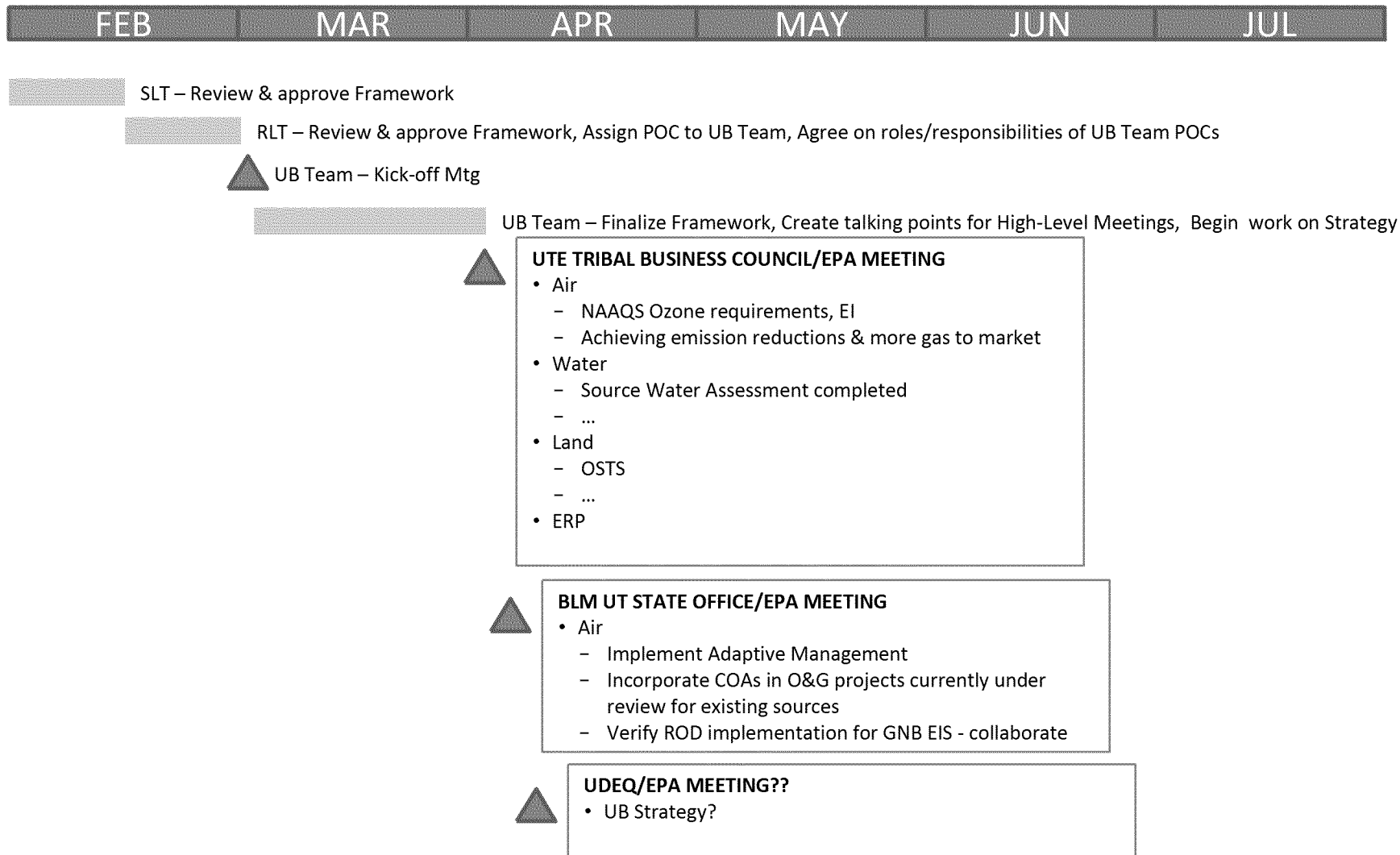


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Framework

- **VISION:** Promote Environmentally Protective Development of Oil and Gas Resources in the Uinta Basin (UB)
- **OBJECTIVES:**
 - Establish R8 UB Team that will work together to:
 - ensure regulatory effectiveness
 - identify regulatory gaps
 - identify metrics to gauge protection achieved or degradation
 - develop strategies to protect human health and the environment from oil & gas development
 - Consult with the Ute Tribe regularly and timely and work together to build their regulatory capacity through technical assistance and training
 - Engage the surrounding communities in the area
 - Collaborate with our local, Tribal, State and Federal partners and Industry and contribute to joint efforts
 - Encourage synergies across R8 through cross-program technical and program information sharing to promote joint problem solving, provide for career development, and build resiliency in our organization

Short-term Timeline



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Outline

DEVELOP
Oil & Gas Resources
Wieber

GOAL – Understand O&G universe by incorporating data sources and identifying data gaps.

PROTECT
Human Health &
Environment

Each area outlined:

- Pressing Issue(s)
- Objectives
- Data Metrics – Data Available & Data Gaps
- Status by Objective
- Plans by Objective

PROTECT: AIR
Ostendorf

AIR GOAL – Improve and protect air quality.

PROTECT: WATER
Stavnes

WATER GOAL – Improve understanding of water management cycle for energy development and protect drinking water sources and ecosystems.

PROTECT: LAND
??

LAND GOAL –

NEPA
Vaughan

NEPA GOAL –

PROTECT: Emer. Resp & Prep
??

ERP GOAL -

BUILD
Tribal Capacity
?

GOAL –

ENGAGE
Community
?

GOAL –

COLLABORATE
Tribe, Agencies & Industry

GOAL –

DEVELOP
Careers &
Organizational
Resiliency

GOALS –

- Broaden multi-media and multi-discipline experience
- Provide leadership opportunities

DEVELOP

Oil & Gas
Resources

OBJECTIVES

- 1) Create one-stop dataset on oil & gas development activity to inform strategy to protect human health & the environment
- 2) Identify data gaps and how and whether to fill
- 3) Create web-viewer platform of UB O&G data
- 4) Maintain up-to-date maps/data for emergency response & preparedness

DEVELOP

Oil & Gas Resources

Wieber

STATUS - Create one-stop dataset on oil & gas development activity

- A. Historic production data and Top 20 Oil/Water/Gas producers 1990-2013 (EPA HQ DrillingInfo)
 - Within Exterior Boundaries U&O
 - Remainder of UT
- B. UTDOGM O&G Data
- C. Federal agency data collaboration:
 - Met with BIA-IOEED
 - Planning meeting with ONRR
- D. Identified data gaps

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STATUS - Identify data gaps and how and whether to fill

- A. Definition of “Uinta Basin”
 - EPA R8 air quality “unclassifiable” designation boundary
 - EPA Greenhouse Gas Reporting Program – W
 - WRAP Emission Inventory
 - UGS boundary

- B. Definition of Indian country – Uintah Valley checker-board area
 - Operators & UDAQ using UDAQ(?) map
 - Exterior Boundary definition hampers analysis of universe

- C. O&G development data we do not have
 - Volume of gas flared by well
 - Volume of lease gas used
 - Location of pits and produced water ponds
 - Spill data that is accessible for queries and aggregation
 - Destination & chemistry of produced water
 - Chemicals used on site for HF, well maintenance, P/L hydrate inhibitor, etc.
 - ...

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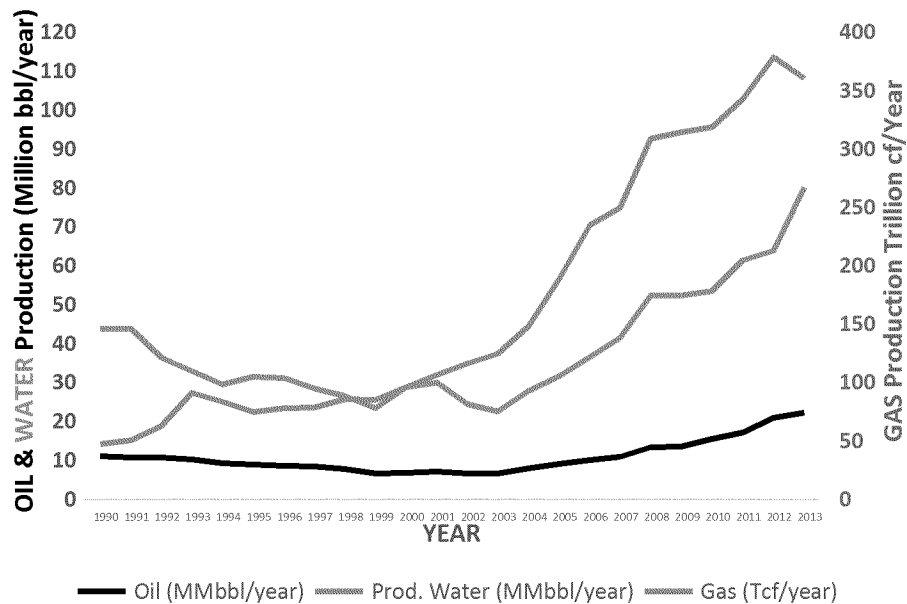
DEVELOP

Oil & Gas Resources

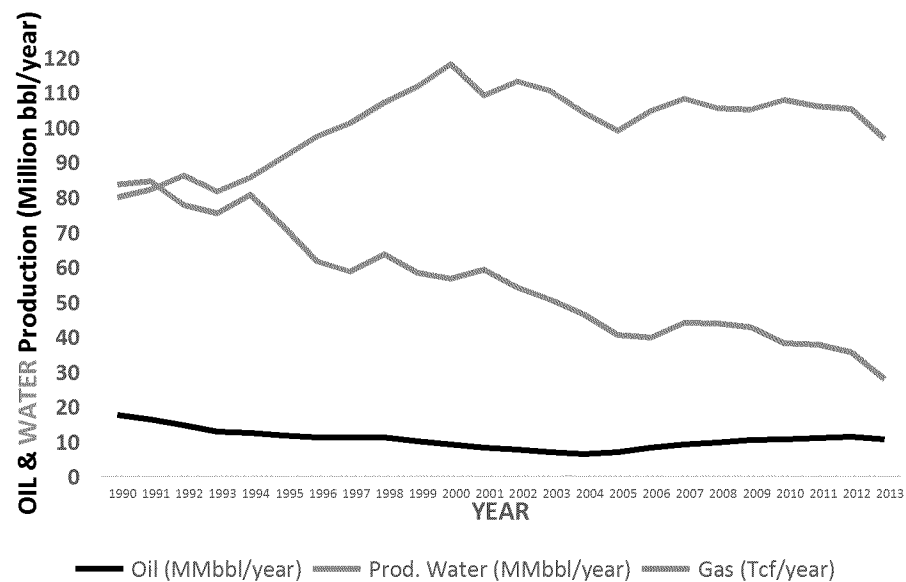
Wieber

HISTORIC OIL/GAS/WATER PRODUCTION

U&O Reservation Exterior Boundaries Production



UTAH (Non-Reservation) Production



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Oil & Gas Resources

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TOP 20 OIL PRODUCERS

Within Exterior Boundaries U&O Current Operator	Number of Wells (2013)	OIL Produced Barrels (2013)
NEWFIELD PRODUCTION COMPANY	1,249	5,166,804
BILL BARRETT CORPORATION	211	2,515,356
EP ENERGY E&P COMPANY, LP	248	2,457,439
BERRY PETROLEUM COMPANY	789	2,148,717
CRESCENT POINT ENERGY US CORP	178	1,762,487
KERR-MCGEE CORP.	2,619	1,146,171
QEP ENERGY COMPANY	855	1,040,150
DEVON ENERGY CORPORATION	80	852,390
EL PASO CORPORATION	70	794,095
AXIA ENERGY LLC	43	751,202
PETROGLYPH OPERATING COMPANY INC	183	666,084
EOG RESOURCES, INC.	1,328	617,830
ELK PRODUCTION UINTAH, LLC	28	397,723
QUINEX ENERGY CORP	18	180,941
FINLEY RESOURCES, INC.	36	126,930
CITATION OIL AND GAS CORPORATION	43	112,892
XTO ENERGY, INC.	446	69,440
GASCO PRODUCTION COMPANY	127	64,728
HARVEST (US) HOLDINGS, INC	8	53,929
APPALOOSA OPERATING COMPANY LLC	4	30,284
SUM TOP 20	8,563	20,955,592
Compared to TOTAL 2013 U&O:	9,193	21,161,614
Top 20 account for	93%	99%
47 Operators account for remainder		

UT Non-Reservation Current Operator	Number of Wells (2013)	OIL Produced Barrels (2013)
RESOLUTE NATURAL RESOURCES COMPANY, LLC	378	3,706,664
NEWFIELD PRODUCTION COMPANY	671	2,117,994
WOLVERINE GAS & OIL COMPANY OF UTAH, LLC	23	1,738,372
FIDELITY EXPLORATION AND PRODUCTION CO	17	950,418
CITATION OIL AND GAS CORPORATION	49	304,503
CRESCENT POINT ENERGY US CORP	51	220,420
BILL BARRETT CORPORATION	268	99,695
US OIL & GAS INC	41	78,715
MOBIL EXP & PROD US INC	7	76,511
CCI PARADOX UPSTREAM, LLC	28	67,912
QEP ENERGY COMPANY	24	36,942
NNOGC EXPLORATION AND PRODUCTION, LLC	22	35,676
WESTERN ENERGY OPERATING, LLC	13	34,503
MERIT ENERGY LTD.	21	33,555
WHITING OIL AND GAS CORPORATION	6	27,871
SEELEY OIL COMPANY, LLC	13	25,924
QUINEX ENERGY CORP	1	21,446
RICHARDSON OPERATING COMPANY	9	20,239
NAVAJO NATION OIL & GAS COMPANY, INC.	3	16,662
NACOGDOCHES OIL AND GAS, INC.	14	13,442
SUM TOP 20	1,659	9,627,464

Data: HQ DrillingInfo thru 2013. Wells – Producing, Active oil, gas and oil & gas wells.

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DEVELOP

Oil & Gas Resources

Wieber

TOP 20 GAS PRODUCERS

Within Exterior Boundaries U&O Current Operator	Number of Wells (2013)	GAS Produced MMcf (2013)
KERR-MCGEE CORP.	2,619	216,039,533
EOG RESOURCES, INC.	1,328	32,851,300
QEP ENERGY COMPANY	855	21,108,638
BILL BARRETT CORPORATION	211	14,314,948
BERRY PETROLEUM COMPANY	789	13,092,996
XTO ENERGY, INC.	446	11,445,432
NEWFIELD PRODUCTION COMPANY	1,249	11,351,736
GASCO PRODUCTION COMPANY	127	6,995,359
EP ENERGY E&P COMPANY, LP	248	4,714,655
WHITING OIL AND GAS CORPORATION	22	4,155,766
DOMINION EXPLORATION & PROD INC	160	3,690,857
EL PASO CORPORATION	70	2,402,820
CRESCENT POINT ENERGY US CORP	178	1,709,583
DEVON ENERGY CORPORATION	80	1,670,151
ENDURING RESOURCES, LLC	76	1,407,418
WEXPRO COMPANY	65	1,055,530
COASTAL OIL & GAS CORP.	87	1,003,255
MILLER, DYER & CO. LLC	4	972,287
UINTAH INVESTORS LLC	9	886,879
PETROGLYPH OPERATING COMPANY INC	183	787,331
SUM TOP 20	8,806	351,656,474
Compared to TOTAL 2013 U&O:	9,193	356,887,389
Top 20 account for	96%	99%
47 Operators account for remainder		

UT Non-Reservation Current Operator	Number of Wells (2013)	GAS Produced MMcf (2013)
CONOCOPHILLIPS COMPANY	551	24,984,850
BILL BARRETT CORPORATION	268	20,550,130
ANADARKO E&P ONSHORE, LLC	164	10,376,262
RESOLUTE NATURAL RESOURCES COMPANY, LLC	378	5,408,412
XTO ENERGY, INC.	128	5,349,321
KERR-MCGEE CORP.	64	4,464,497
MERIT ENERGY LTD.	21	3,367,401
NEWFIELD PRODUCTION COMPANY	671	3,186,704
CCI PARADOX UPSTREAM, LLC	28	2,092,631
LONE MTN PRODUCTION CO	87	1,337,689
BLUE TIP CASTLEGATE, INC.	26	1,060,459
MARATHON OIL COMPANY	17	852,247
NATIONAL FUEL CORPORATION	34	783,510
GORDON CREEK, LLC	12	629,171
QEP ENERGY COMPANY	24	560,913
SOUTHWESTERN ENERGY VENTURES COMPANY, L	37	469,562
FIDELITY EXPLORATION AND PRODUCTION CO	17	453,269
SUMMIT OPERATING, LLC	3	407,970
CITATION OIL AND GAS CORPORATION	49	350,175
WEXPRO COMPANY	16	338,263
SUM TOP 20	2,595	87,023,436

Data: HQ DrillingInfo thru 2013. Wells – Producing, Active oil, gas and oil & gas wells.

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DEVELOP

Oil & Gas Resources

Wieber

TOP 20 WATER PRODUCERS

Within Exterior Boundaries U&O Current Operator	Number of Wells (2013)	Water Produced Barrels (2013)
KERR-MCGEE CORP.	2,619	19,883,503
CRESCENT POINT ENERGY US CORP	178	13,585,450
EP ENERGY E&P COMPANY, LP	248	9,410,612
BILL BARRETT CORPORATION	211	6,203,779
EOG RESOURCES, INC.	1,328	5,256,919
QEP ENERGY COMPANY	855	4,882,977
NEWFIELD PRODUCTION COMPANY	1,249	4,611,416
EL PASO CORPORATION	70	4,068,155
DEVON ENERGY CORPORATION	80	3,742,843
BERRY PETROLEUM COMPANY	789	2,081,901
CITATION OIL AND GAS CORPORATION	43	1,029,854
PETROGLYPH OPERATING COMPANY INC	183	982,235
AXIA ENERGY LLC	43	731,401
GASCO PRODUCTION COMPANY	127	698,966
XTO ENERGY, INC.	446	534,457
ELK PRODUCTION UINTAH, LLC	28	251,987
FINLEY RESOURCES, INC.	36	190,352
DOMINION EXPLORATION & PROD INC	160	174,968
ENDURING RESOURCES, LLC	76	157,819
QUINEX ENERGY CORP	18	155,288
SUM TOP 20	8,787	78,634,882
Compared to TOTAL 2013 U&O:	9,193	79,081,558
Top 20 account for	96%	99%
47 Operators account for remainder		

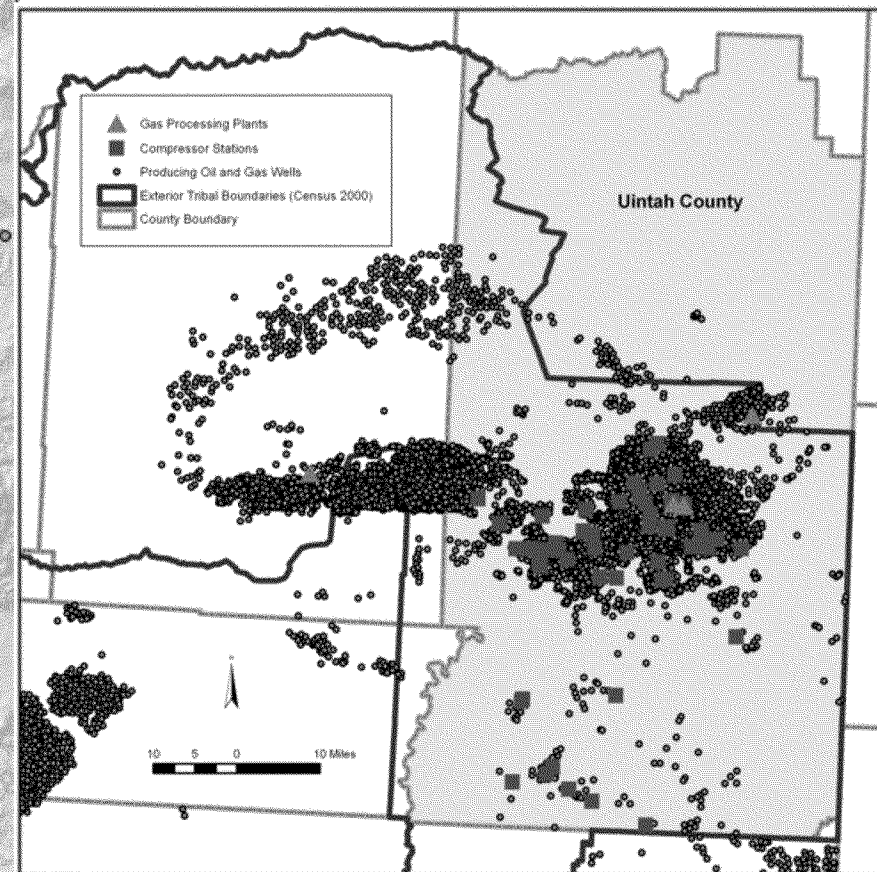
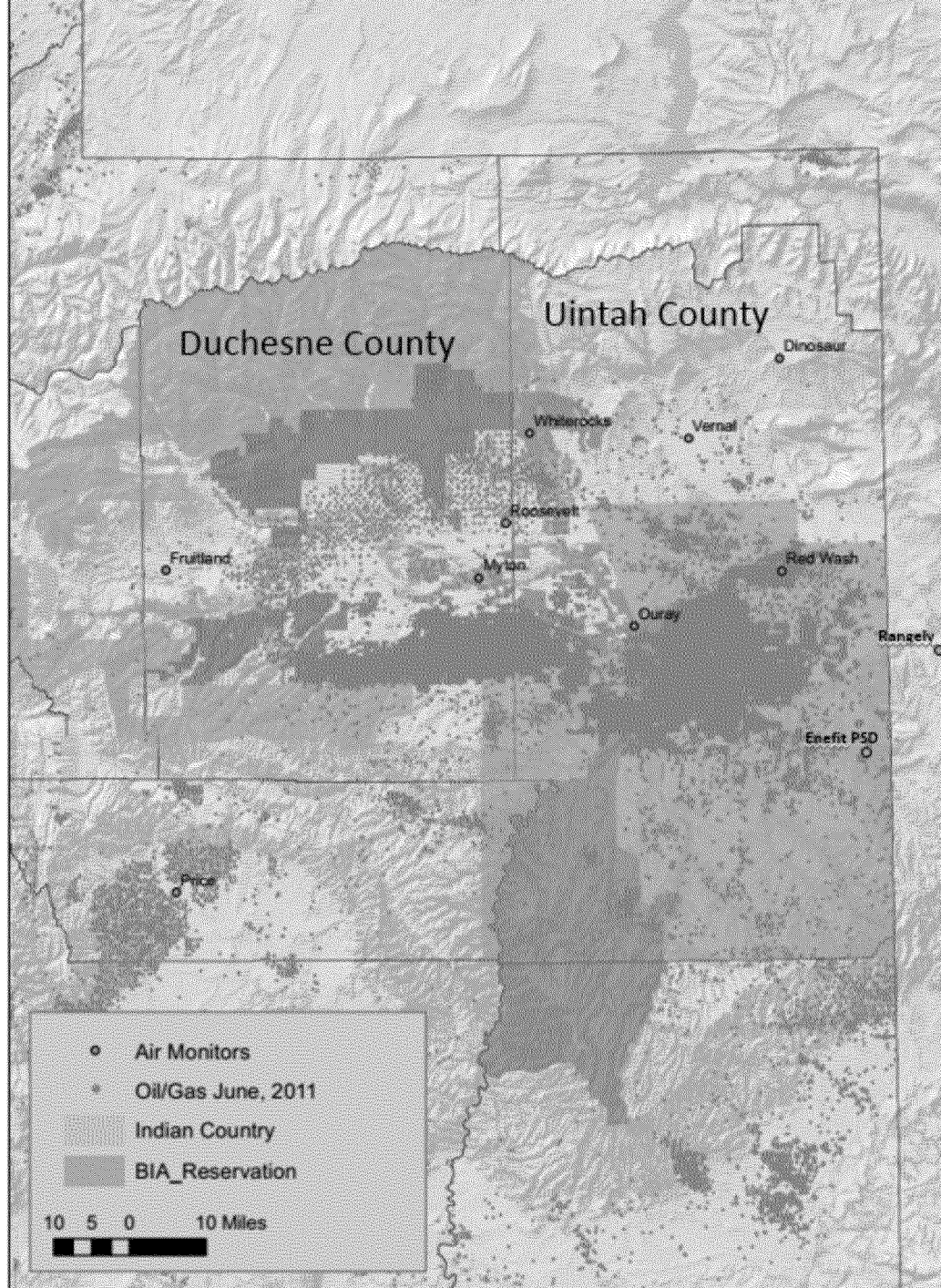
UT Non-Reservation Current Operator	Number of Wells (2013)	Water Produced Barrels (2013)
RESOLUTE NATURAL RESOURCES COMPANY, LLC	378	40,972,245
CITATION OIL AND GAS CORPORATION	49	14,411,302
WESTERN ENERGY OPERATING, LLC	13	10,750,438
CONOCOPHILLIPS COMPANY	551	5,489,034
NEWFIELD PRODUCTION COMPANY	671	5,124,235
XTO ENERGY, INC.	128	3,578,230
WOLVERINE GAS & OIL COMPANY OF UTAH, LLC	23	3,537,070
KERR-MCGEE CORP.	64	3,396,744
RICHARDSON OPERATING COMPANY	9	1,633,491
ANADARKO E&P ONSHORE, LLC	164	1,595,431
MOBIL EXP & PROD US INC	7	867,748
US OIL & GAS INC	41	861,155
MERIT ENERGY LTD.	21	814,749
BLUE TIP CASTLEGATE, INC.	26	658,513
BILL BARRETT CORPORATION	268	555,829
GORDON CREEK, LLC	12	500,358
CRESCENT POINT ENERGY US CORP	51	158,869
QEP ENERGY COMPANY	24	152,435
MARATHON OIL COMPANY	17	99,395
MAR/REG OIL COMPANY	7	69,986
SUM TOP 20	2,524	95,227,257

Data: HQ DrillingInfo thru 2013. Wells – Producing, Active oil, gas and oil & gas wells.

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2016-008149-0010481

Indian country vs. Exterior Boundaries



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PROTECT

Human Health &
Environment

OBJECTIVE

Continue to implement current regulatory and programmatic activities and share challenges/lessons learned/successes with UB Team. Identify what we are protecting with our current activities and the effectiveness of these activities in achieving our desired outcome of environmentally protective energy development.

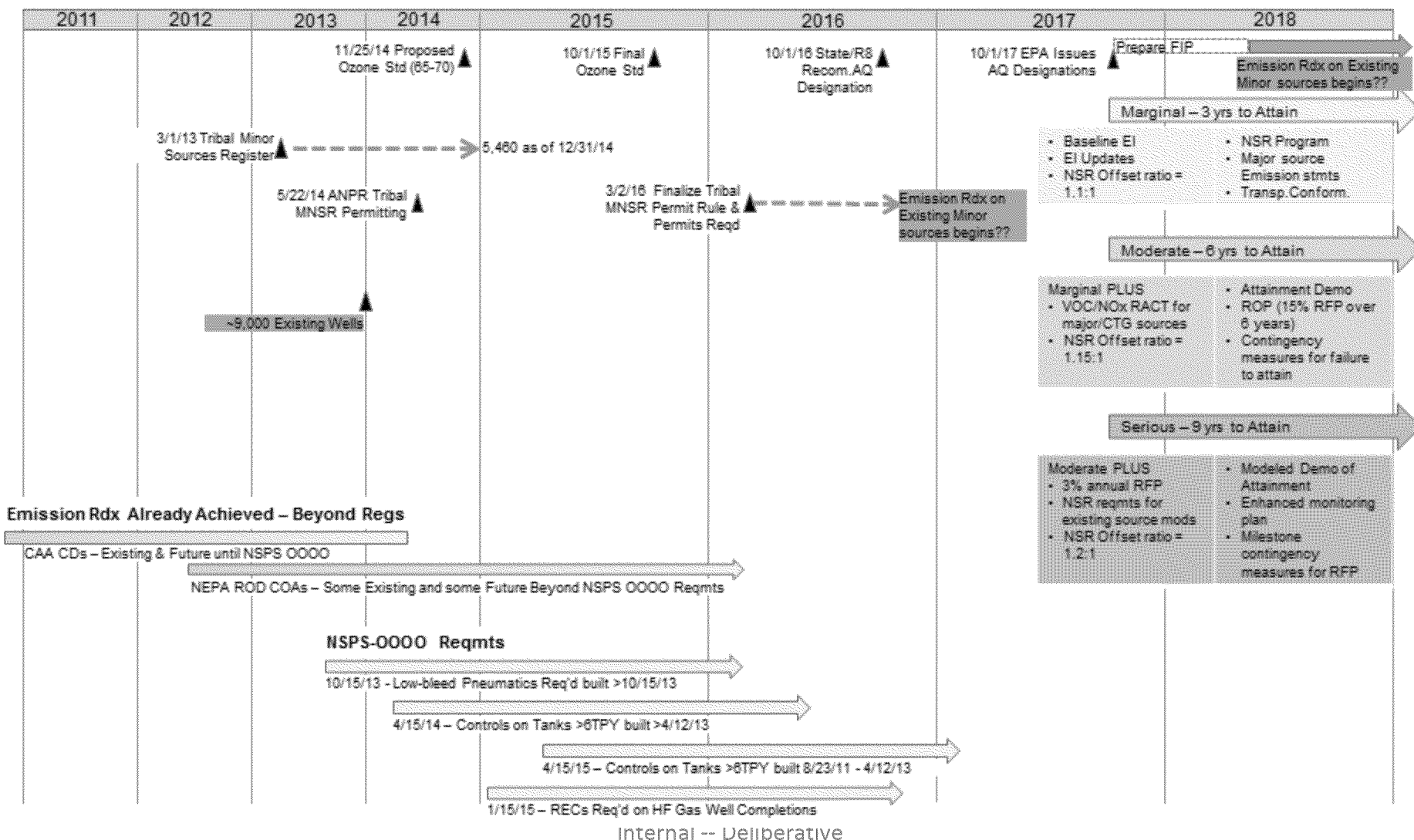
PROTECT: AIR
Ostendorf

NEPA
Vaughan

GOAL

Improve and protect air quality in Uinta Basin
by reducing ozone levels

TIMELINE



OBJECTIVES

- #1 **Lower emissions** from existing sources
- #2 Inform **policy** by engaging with HQ on federal Tribal permitting and O&G rulemaking
- #3 **Measure** air quality and **build** Tribal capacity on operation and AQS-upload of ambient ozone, NOx, PM and meteorological data from four monitors
- #4 Contribute ozone photochemical **modeling** expertise
- #5 Advance air quality **science** in the Uinta Basin
- #6 **Prepare** for ozone designation and attainment demonstration
- #7 Assure **compliance** with CAA regulations
- #8 Identify **data** metrics to trend air quality and EPA work efforts

DATA AVAILABLE

- A. Summary info for registrations and permit actions in the Uintah & Ouray Indian Reservation
[Data Steward – Victoria Parker-Christenson]

Type of Action	Total	Number of affected companies
Registrations	5460	27
Part 71 permit actions pending	18	9
Part 71 permit actions issued	11	5
Syn Minor NSR permits issued	1	1
Syn Minor NSR permits pending	7	4
True Minor NSR permits pending	1	1
PSD issued	1	
Total	5499	

PROTECT: AIR
Ostendorf

NEPA
Vaughan

DATA AVAILABLE

Company (27) - November 2014	# Facilities Registered	# Producing/Active Wells 2013
Kerr-McGee Oil and Gas Onshore LP	1966	2619
EOG Resources, Inc.	1272	1328
QEP Energy Company	683	855
XTO Energy, Inc	568	606
Berry Petroleum Company	367	789
Newfield Production Company	243	1249
Crescent Point Energy U.S. Corp	63	178
Ultra Resources, Inc.	53	0
Bill Barrett Corporation	52	211
El Paso Midstream Group, Inc	37	70
Whiting Petroleum Company	36	22
EP Energy E&P Company, L.P.	31	248
Koch Exploration Company	31	12
Anadarko Uintah Midstream, LLC	18	incl. w/ Kerr-McGee
Rosewood Resources, Inc.	9	27
Enduring Resources, LLC	6	76
QEP Field Services Company	5	incl. w/ QEP Energy
Ute Energy, LLC	4	0
Gasco Energy, Inc	3	127
Red Rock Gathering Company, LLC	3	--
Axia Energy, LLC	2	43
Monarch Natural Gas, LLC	2	--
American Gilsonite Company	1	
Linn Energy, LLC	1	
Mid-America Pipeline Company, LLC	1	
Red Leaf Resources, Inc.	1	
Rhine Construction	1	
US Oil Sands (Utah) Inc.	1	
Grand Total	5460	8460

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NO Tribal Minor Source Registration Rec'd	# Wells (2013) Exterior Bound.
PETROGLYPH OPERATING COMPANY INC	183
COASTAL OIL & GAS CORP.	87
DEVON ENERGY CORPORATION	80
WEXPRO COMPANY	65
CITATION OIL AND GAS CORPORATION	43
FINLEY RESOURCES, INC.	36
ELK PRODUCTION UINTAH, LLC	28
FOUNDATION ENERGY MANAGEMENT, LI	24
QUINEX ENERGY CORP	18
MCVELAIN ENERGY, INC.	13
SUMMIT OPERATING, LLC	12
WOLD OIL PROPERTIES, INC	12
MUSTANG FUEL CORPORATION	11
UINTAH INVESTORS LLC	9
DEL-RIO RESOURCES INC	8
FIML NATURAL RESOURCES, LLC (FNR)	8
HARVEST (US) HOLDINGS, INC	8
THURSTON ENERGY OPERATING	7
RIM OPERATING, INC.	6
(N/A)	5
BEARTOOTH OIL & GAS COMPANY	5
HOMELAND GAS & OIL, INC.	5
WESTSTAR EXPLORATION INC	5
APPALOOSA OPERATING COMPANY LLC	4
CNG PRODUCING COMPANY	4
COCHRANE RESOURCES INC	4
MILLER, DYER & CO. LLC	4
ROBERT L BAYLESS PRODUCER, LLC	4
TIGER ENERGY OPERATING, LLC	4
WIND RIVER RESOURCES INC	4
CIG EXPLORATION, INC.	3
ENERVEST OPERATING, LLC	3
NATIONAL FUEL CORPORATION	3
MAR/REG OIL COMPANY	2
BALLARD PETROLEUM HOLDINGS, LLC	1
BARRETT RESOURCES CORPORATION	1
CANNON, ROBERT	1
EMERY RESOURCE HOLDINGS LLC	1
ENCANA OIL & GAS(USA) INC.	1
FRIAR OIL CO	1
GAS PRODUCING ENTERPRISES, INC.	1
JMD ENERGY INC	1
MAK-J ENERGY PARTNERS LTD	1
MAXIMUM ENERGY CORPORATION	1
MOUNTAIN OIL AND GAS INC	1
SOUTHWESTERN ENERGY VENTURES COM	1
STEWART PETROLEUM CORPORATION	1
UINTA-TAYLOR FUND, LTD	1
VANTAGE ENERGY UINTA LLC	1
YATES PETROLEUM CORPORATION	1
TOTAL	733

DATA AVAILABLE

B. Status on 4th Highest Max and Design Values in Uinta Basin by year [Data Steward – Richard Payton]

All Data: 4th Max 8-hour O3, ppb (NAAQS = 75 ppb)

Year	Dinosaur	Vernal	Redwash	Ouray	Roosevelt	Myton	Whiterocks	Fruitland	Rangely
Regulatory?	Jan'14	YES	Apr'13	Apr'13	YES	Apr'13	Apr'13	YES	YES
2007	63								
2008	66								
2009	63		67	67					
2010	68		98						58
2011	90		100			111	68	65	73
2012	75	64	67	70	67	71	69	70	69
2013	113	102	114		104	109	95	62	91
2014	64	62	63	79	62	67	64	64	62

Regulatory and Non Regulatory Design Values	Dinosaur	Vernal (Regulatory)	Redwash	Ouray	Roosevelt (Regulatory)	Myton	Whiterocks	Fruitland (Regulatory)	Rangely (Regulatory)
'11-'13	92.7		93.7	106.0		97.0	77.3	65.7	77.7
'12-'14	84.0	76.0	81.3	93.7	77.7	82.3	76.0	65.3	74.0

75 ppb NAAQS

Air Quality Index:

Green	Good
Yellow	Moderate
Orange	Unhealthy for Sensitive Groups
Red	Unhealthy
Purple	Very Unhealthy

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DATA AVAILABLE

- The State and Tribe recommendations on designation in Oct16
- Three years of “regulatory” data from all monitors shown above (except Dinosaur) that can be used to determine the Design Value for the Uinta Basin
- With the current 93.7 Design Value from the Ouray monitor, the area could be classified as Serious

Nonattainment Designation Classification	Design Value (ppb)		
	Current 75 ppb Ozone NAAQS	70 ppb Ozone NAAQS (Estimated)	65 ppb Ozone NAAQS (Estimated)
Marginal	76 - <86	71 - <80	66 - <75
Moderate	86 - <100	80 - <93	75 - <87
Serious	100 - <113	93 - <105	87 - <98
Severe	113 - <119	105 - <111	98 - <103
Extreme	119 - <175	111 - <163	103 - <152

DATA AVAILABLE

C. Emission data in Uinta Basin

- WRAP – Phase III *[Data Steward – Cindy Beeler]*

UINTA BASIN - WRAP PH.III										
Description	2006 Emissions (tons/year)					2012 Emissions (tons/year)				
	NOx	VOC	CO	SOx	PM10	NOx	VOC	CO	SOx	PM10
Dehydrator	148	19,470	124	0	11	225	30,665	189	0	17
Pneumatic devices	0	14,916	0	0	0	0	25,083	0	0	0
Oil Tank	0	14,357	0	0	0	0	20,722	0	0	0
Pneumatic pumps	0	8,386	0	0	0	0	14,322	0	0	0
Condensate tank	0	6,195	0	0	0	0	21,719	0	0	0
Unpermitted Fugitives	0	1,910	0	0	0	0	3,212	0	0	0
Permitted Sources	2,339	1,320	927	5	32	3,184	4,355	2,517	8	48
Truck Loading of Oil	0	964	0	0	0	0	1,391	0	0	0
Venting - Compressor Startup	0	825	0	0	0	0	1,300	0	0	0
Venting - Compressor Shutdown	0	782	0	0	0	0	1,233	0	0	0
Artificial Lift	2,184	674	2,522	1	94	3,053	955	34,750	2	136
Compressor engines	2,207	510	2,318	0	31	3,169	695	4,236	0	46
Drill rigs	4,779	415	1,804	362	354	4,773	362	1,507	3	236
Venting - blowdowns	0	292	0	0	0	0	460	0	0	0
Venting - initial completions	0	241	0	0	0	0	332	0	0	0
Truck Loading of Condensate	0	127	0	0	0	0	445	0	0	0
Heaters	1,016	58	863	7	80	1,671	95	1,420	11	132
Miscellaneous engines	163	39	59	0	1	199	63	201	0	1
Venting - recompletions	0	37	0	0	0	0	51	0	0	0
Workover rigs	255	24	103	21	21	271	22	91	0	15
Gas Plant Truck Loading	0	3	0	0	0	0	12	0	0	0
Condensate tank flaring	1	0	3	0	0	2	0	9	0	0
Dehydrator Flaring	0	0	1	0	0	0	0	1	0	0
Initial completion Flaring	1	0	3	0	0	1	0	4	0	0
Total	13,093	71,546	8,727	396	623	16,547	127,495	44,925	24	631

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DATA AVAILABLE

C. Emission data in Uinta Basin

- EPA R8 Minor Source Registration & Permitted Source Emissions – On Indian country *[Data Steward – Victoria Parker-Christenson]*

Operator	# Registrations	PM10	PM2.5	SO2	NOx	CO	VOC
EOG Resources, Inc.	1272				254	215	18,622
XTO Energy, Inc	568	53	53	90	4,851	4,313	17,607
Kerr-McGee Oil and Gas Onshore LP	1966			3	1,878	1,615	13,800
QEP Energy Company	684	22	22	2	944	808	5,095
Newfield Production Company	252	41	41	1	858	1,072	3,085
Berry Petroleum Company	367	38	38	1	1,264	1,359	1,983
Bill Barrett Corporation	54	15	14	39	258	236	942
Ultra Resources, Inc.	55	23	23	4	315	639	806
Koch Exploration Company	31	1	1	-	7	6	564
Anadarko Uintah Midstream, LLC	18	1	1	0	916	121	458
Crescent Point Energy U.S. Corp	63	12	6	0	163	246	452
EP Energy E&P Company, L.P.	32	5	5	0	130	122	397
Whiting Petroleum Company	36	1	1	0	10	8	237
El Paso Midstream Group, Inc	37						132
QEP Field Services Company	5	4	4	1	127	96	82
Rosewood Resources, Inc.	9	1	1	0	49	16	59
US Oil Sands (Utah) Inc.	1	3	1	13	71	55	42
Enduring Resources, LLC	6	0	0	0	5	4	42
Red Rock Gathering Company, LLC	3	1	1	0	89	50	40
Ute Energy, LLC	4	1	1	-	7	8	37
Gasco Energy, Inc	4	0	0		7	17	23
Axia Energy, LLC	2	0	0	0	5	9	15
Monarch Natural Gas, LLC	2	0	0	0	34	20	14
Linn Energy, LLC	1	0	0	0	4	3	9
American Gilsonite Company	1	20	20	0	3	5	9
Mid-America Pipeline Company, LLC	1	1	1	1	70	94	5
Red Leaf Resources, Inc.	1	9	2	1	21	7	3
Rhine Construction	1	4	2				
Total Registr. 12/23/14	5476	257	238	157	12,340	11,144	64,561

Internal – Deliberative

DATA AVAILABLE

C. Emission data in Uinta Basin

- EPA Greenhouse Gas Reporting Program – Subpart W – Uinta Basin 2013
[Data Steward – Cindy Beeler]

Summary data collected by the Greenhouse Gas Reporting Program for 2013

This data was reported to EPA by facilities as of 8/18/2014.

All emissions data is presented in units of metric tons of carbon dioxide equivalent using GWP's from IPCC's AR4 (see FAQs tab)

Facility Id	FRS Id	Facility Name	Basin	Total reported emissions from Onshore Oil & Gas Production	Total Emissions from Onshore Oil & Gas Production by Gas		
					CO2 emissions (non-biogenic)	Methane (CH4) emissions	Nitrous Oxide (N2O) emissions
1009282	110002994190	575 Uinta Basin QEP Energy Company	575 - Uinta Basin	418,397	29,157	389,205	35
1008167	110055512529	Berry Petroleum Company - Uinta Basin 575	575 - Uinta Basin	111,371	15,647	95,699	24
1009357	110028136700	Bill Barrett Corporation - Uinta Basin (575)	575 - Uinta Basin	212,379	66,835	145,436	108
1007481	110015761996	ConocoPhillips' Uinta (575)	575 - Uinta Basin	76,965	536	76,429	
1008086	110002004964	Crescent Point Energy U.S. Corp - Uinta Basin	575 - Uinta Basin	32,222	6,037	26,170	15
1008354	110034207481	EOG Resources, Inc. 575 Uinta basin	575 - Uinta Basin	562,551	1,513	561,038	1
1009350	110054613539	EP Energy E&P 575 Uinta basin	575 - Uinta Basin	132,740	5,533	127,204	4
1008109	110055512271	Gasco Energy Uintah Basin Operations	575 - Uinta Basin	55,180	611	54,569	1
1008407	110055512388	Newfield.575.Uinta	575 - Uinta Basin	106,375	54,682	51,617	77
1009165	110028136700	Uinta Basin - AAPG Province 575	575 - Uinta Basin	440,990	60,028	380,955	7
1008169	110032607089	Uinta Basin Wexpro Company	575 - Uinta Basin	18,550	11	18,539	
1011221	110014428770	Ultra Resources/Uintah Basin	575 - Uinta Basin	43,960	37,665	6,277	18
1009389	110055516035	XTO Energy Inc 575 Uintah	575 - Uinta Basin	174,221	13,688	160,492	42

Internal -- Deliberative

DATA AVAILABLE

C. Emission data in Uinta Basin

- NSPS OOOO Annual Reports and Well Completion Notifications
[Data Steward – Cindy Reynolds' Team]

EPA R8 receives annual reports via paper copies so resource-intensive to review, evaluate and analyze. Well completion notifications are submitted to dedicated email box however, there is uncertainty about the universe of such notifications since if an Operator is already required to report to a State regulator (e.g. Utah DOGM) then they are not required to report to EPA.

DATA GAPS

A. Disparity between top-down and bottom-up emission estimates in UB

- From EPA's GHGRP-W, the sum of the Uinta Basin methane emissions reported in 2013 equals 2.1 million metric tons of CO₂e which is equivalent to ~4.4 billion cubic feet of methane. This equates to **1.0%** of the gas produced in these five counties in 2013 (per UDOGM data). This compares to results from a 2012 field study in the Uinta Basin which suggested an emission rate of methane leakage at **6.2-11.7%** of the total production.
- From the UBOS research modeling efforts, **methane** and **total VOC** emissions for the oil/gas sector within the UB in the bottom-up inventory (EPA NEI-2011) are lower by a factor of **4.8** and **1.8** than the top-down estimates, respectively.

DATA GAPS

- B. Tribal Minor Source Registrations – Need def'n "Indian country" to compare Tribal Minor Source registrations to producing/active wells to:
- assess gaps in operator registrations
 - ensure not missing or duplicating sources in emission inventory accounting
- C. US Well ID Numbers are not currently reported in minor source registration or permit applications which make it resource intensive to cross check with other reports and update data base as facilities change ownership (e.g. to compare # producing wells with registered sources to identify potential sources who have not registered). R8 will need to work with OAR/OAQPS to require the inclusion of US Well ID in future minor source registrations.

DATA GAPS

- D. Estimate of emission reductions already achieved to-date that are beyond regulatory requirements to strategically target further emission reductions in UB:
- **CAA settlements** requiring emission reductions on existing and “future” facilities which are pre-NSPS OOOO dates.
 - **NEPA** EIS ROD COAs on Kerr-McGee and Gasco and EA ROD COAs for XTO for pre-NSPS OOOO facilities.
 - **Minor sources already controlling** (pre-NSPS OOOO) as identified through data mining of Tribal Minor Source Registrations.

CONSENT DECREE Emission Reductions at pre-NSPS OOOO Facilities

- Injunctive Relief & Projects - Annual
 - ~3,800 VOC tons (incl. ~600 HAPs Tons)
 - ~2,600 NOx Tons
 - ~1,600 CO Tons
 - ~830 Methane Million cubic feet conserved
 - ~10,200 homes heated
 - ~68,000 acres of trees planted
- “Future” facilities
[CD Enter Date – NSPS OOOO]
To be estimated

UB CAA Settlements

- Kerr-McGee/Anadarko
- Wind River Bill Barrett
- Dominion/XTO
- Gasco/Monarch
- Miller Dyer/Whiting

CONSENT DECREE Requirements for “Future” Facilities

- Low or no-bleed pneumatic devices
- Low-emission glycol dehydrators
- Catalysts on new natural gas fired compressor engines >500hp
- Controls on new storage tanks w/ PTE >20 TPY VOC (~ > 60 BOPD oil or > 14 BOPD condensate)

NEPA RODs

- Kerr-McGee/Anadarko – Greater Natural Buttes EIS
- Gasco – Gasco EIS
- XTO – Riverbend EA

ACEPMs (Applicant-committed environmental protection measures) at pre-NSPS OOOO Facilities

- Low emission dehyds at existing & new wellpads & Compressor stations
- Electric compression where feasible
- Controls on existing & new oil/cond tanks
- Retrofit existing high-bleed pneumatics w/ low bleed
- Solar-powered chemical pumps
- Catalysts on new compressor engines
- Annual DI&M program
- Tier II drill rig engines
- Natural gas or LPG drill rig engine pilot
- Wet gas central gathering system
- Centralize tank locations for water and condensate as feasible
- Install dry seals on new centrifugal compressors.
- Install and optimize artificial lift.

DATA GAPS

- E. Estimate of emission reductions being achieved on "new" facilities via NSPS OOOO :
- Storage tanks installed >4/12/13 controlled from 4/15/14 or start-up whichever is later
 - Storage tanks installed >8/23/11 and <4/12/13 controlled by 4/15/15
 - Pneumatic controllers installed >10/15/13 must be low- or no-bleed
 - Hydraulically fractured natural gas wells – reduced emission completions where gas captured rather than flared > 1/15/15

OBJECTIVES - STATUS

#1 Lower emissions from existing sources

a) UDAQ

- Ozone Advance, GAO, new regs ... *Ostendorf*

b) Ute Tribe

- Ozone Advance, BMPs to BIA(?), supporting USU pond work ... *Ostendorf*

c) EPA - Emission reductions already achieved ... *Beeler*

- CAA settlements
- NEPA RODs

#2 Inform **policy** by engaging with HQ on federal Tribal permitting and O&G rulemaking

d) Tribal Minor Source Permit ANPR – *C. Smith*

e) 1/15/15 – call w/ *Goffman/Card/Daly/Beeler*

f) 1/30/15 – call w/ *McCabe/Tribal MNSR/Daly/Rothery/Beeler*

OBJECTIVES - STATUS

#3 Measure air quality and **build** Tribal capacity on operation and AQS-upload of ambient ozone, NOx, PM and meteorological data from four monitors ...

Ostendorf

Josh Rickard

#4 Contribute ozone photochemical **modeling** expertise ... *Ostendorf*

Gail Tonnesen & Rebecca Matichuk

- Utah Air Resource Technical Advisory Group (RTAG) – ARMS modeling
- Three-State Study – CMAQ
- R8/ORD/OAQPS collaboration on R2P2 CMAQ w/ winter ozone focus

#5 Advance air quality **science** in the Uinta Basin ... *Ostendorf*

a) UBOS 2014 Field Study – 12/31/14 - 2nd draft under review

Gail Tonnesen

b) Preliminary discussions with ORD, DOE-NETL, USU, UDAQ on air research collaboration for produced water ponds and pneumatic controllers

Cindy Beeler

Internal -- Deliberative

OBJECTIVES - STATUS

#6 **Prepare** for ozone designation and attainment demonstration ... *Ostendorf*

a) Emission Inventory

- Multi-stakeholder Workgroup – 2nd meeting 1/28/15
- Inventory Preparation Plan 1st draft – *Mark Komp*
- Data mining Tribal Minor Source Registrations – *Alexas Gilbert*

#7 Assure **compliance** with CAA regulations

- Recent UB settlements – Newfield NSPS JJJJ ...
- Past CAA inspection counts _____

#8 Identify **data** metrics to trend air quality and EPA work efforts

OBJECTIVES - PLANS

#1 Lower emissions from existing sources

a) High-level meeting EPA R8 and Ute Tribal Business Council – Spring 2015

Shaun McGrath, Alfreda Mitre, Carl Daly, ...

- Partnership with Ute Envir. Dept to build Tribal capacity
- Emission inventory collaboration
- Lag for federal regs on existing sources for parity across border
- Engage industry - potential for Reservation-Specific FIP

b) High-level meeting EPA R8 and BLM Utah State Office – Spring 2015

Shaun McGrath, Alfreda Mitre, Phil Strobel, ...

- Implementation of Adaptive Management Strategies: GNB, Gasco, Riverbend
- Incorporation of COAs in O&G projects currently under review
- Verification of ROD implementation for GNB EIS

OBJECTIVES - PLANS

#1 Lower emissions from existing sources (cont'd)

- c) EPA-NEPA – Incorporate COAs to address emission reductions from existing sources in projects currently under review

Vaughan

- Monument Buttes Final EIS – Newfield, ~5,750 wells, in-fill
- Greater Chapita Wells Draft EIA – EOG, ~2,800 wells, in-fill

- d) EPA-NEPA & ECEJ - Greater Natural Buttes Post-ROD Follow-up

Vaughan, Reynolds-Air

- Assess compliance with ROD requirements
- Opportunity for BLM/Tribe/EPA inspector collaboration, training and capacity building?

OBJECTIVES - PLANS

#2 Inform **policy** by engaging with HQ on federal Tribal permitting and O&G rulemaking

- a) Tribal Minor Source Permit rule-making – *Smith*
- b) Control Technique Guidelines (CTGs) for O&G VOCs existing sources - ??
- c) NSPS OOOO2 Workgroup ongoing participation – *Beeler*
- d) GHGRP-W Workgroup ongoing participation - *Beeler*

#3 **Measure** air quality and **build** Tribal capacity on operation and AQS-upload of ambient ozone, NOx, PM and meteorological data from four monitors - *Rickard*

- Verify data meets completeness and is timely
- QA/QC data
- Technical Systems Audit (TSA) every three years. Next one due ____.

OBJECTIVES - PLANS

#4 Contribute ozone photochemical **modeling** expertise— *Tonnesen, Matichuk*

a) Three-State Study – work with ORD on:

- WARF runs (weather f'cst)
- CMAQ (ozone model)
- Sensitivity studies to improve model performance
- SMOKE emission processing updates – Identify UB EI needs
- SPECIATE to provide speciation profiles – need UB specific

b) Utah Air Resource Technical Advisory Group (RTAG) – *Matichuk, Tonnesen*

- NEPA-focus on ozone modeling results through BLM's ARMS model - BLM shares model results and EPA reviews and provides comments
- Improve this model used for NEPA analysis possibly through the Three-State work or through the UDAQ/USU/UU model work

OBJECTIVES - PLANS

#4 Contribute ozone photochemical **modeling** expertise (cont'd)

c) NEPA Project Reviews UBOS Technical Workgroup – *Matichuk, Vaughan*

- Monument Butte Final EIS – Call BLM/EPA in Jan15 to discuss response to comments on Pre-FEIS
- Moab and Monticello MLP EIS – Provide comments on Pre-DEIS by 1/15/15
- Greater Chapita Wells Draft EIS – EPA reviewed Proposed Action, emissions inventory, and near-field modeling pre-protocol

#5 Advance air quality **science** in the Uinta Basin

a) UBOS Technical Workgroup – *Tonnesen*

Complete review and comments of 2014 Field Study draft – finalize Feb15

OBJECTIVES - PLANS

#5 Advance air quality **science** in the Uinta Basin (cont'd)

- b) Continue discussions with ORD, DOE-NETL, USU, UDAQ on air research collaboration for produced water ponds and pneumatic controllers – *Beeler*
- Submit RARE proposal by 2/27/15 for FY16 \$s and investigate other funding sources
 - Inform emission inventory work underway
 - Spotlight this emission source to encourage Operators to tackle reductions voluntarily from “existing” sources as well as inform them on the effect of maintenance practices on emissions
 - Collaborate on scope of a “directed inspection & maintenance” program that is in NEPA COAs and has been proposed by WEA as a voluntary effort to reduce emissions
 - Build Tribal capacity by training environmental staff on use of Hi-Flow and IR camera
 - Develop defensible protocol for use of R8’s Hi-Flow Sampler by compliance staff in the future

Internal -- Deliberative

OBJECTIVES - PLANS

#6 **Prepare** for ozone designation and attainment demonstration - *Ostendorf*

a) Emission Inventory

- Multi-stakeholder Workgroup participation
- Data mining Tribal Minor Source Registrations – *Alexas Gilbert*
- Compare emission estimating formulas/methodologies (EPA NEI Tool, EPA GHG Inventory, EPA GHGRP-W, WRAP, etc.) - ??

b) Define conceptual scope, schedule and resource requirements to develop planning and control mandates for Marginal, Moderate and Severe ozone designation classification

- Establish offset ratio bank?
- Major source emission statements
- General conformity
- VOC/NO_x RACT for major/CTG sources
- Reasonable Further Progress (RFP) and Rate-of-Progress (ROP) plans
- Contingency measures for failure to attain
- Other ...?

Internal -- Deliberative

OBJECTIVES - PLANS

#7 Assure **compliance** with CAA regulations

- a) FY15 inspection/investigation plans in UB
- b) Support pneumatic controller air research – IR camera, Hi-Flow Sampler
- c) DOJ/EPA Collaboration on O&G in Indian country
- d) ECEJ play a role in NEPA assessment of GNB ROD compliance?
Opportunity to collaborate with joint field inspection teams with BLM, UDAQ and Tribal inspectors to build capacity (e.g. training on IR camera and NSPS OOOO requirements)
- e) HQ request for compliance of Federal Facilities – is there a nexus for O&G operations on federal lands and ROD-compliance assurance since both initiatives out of OECA?

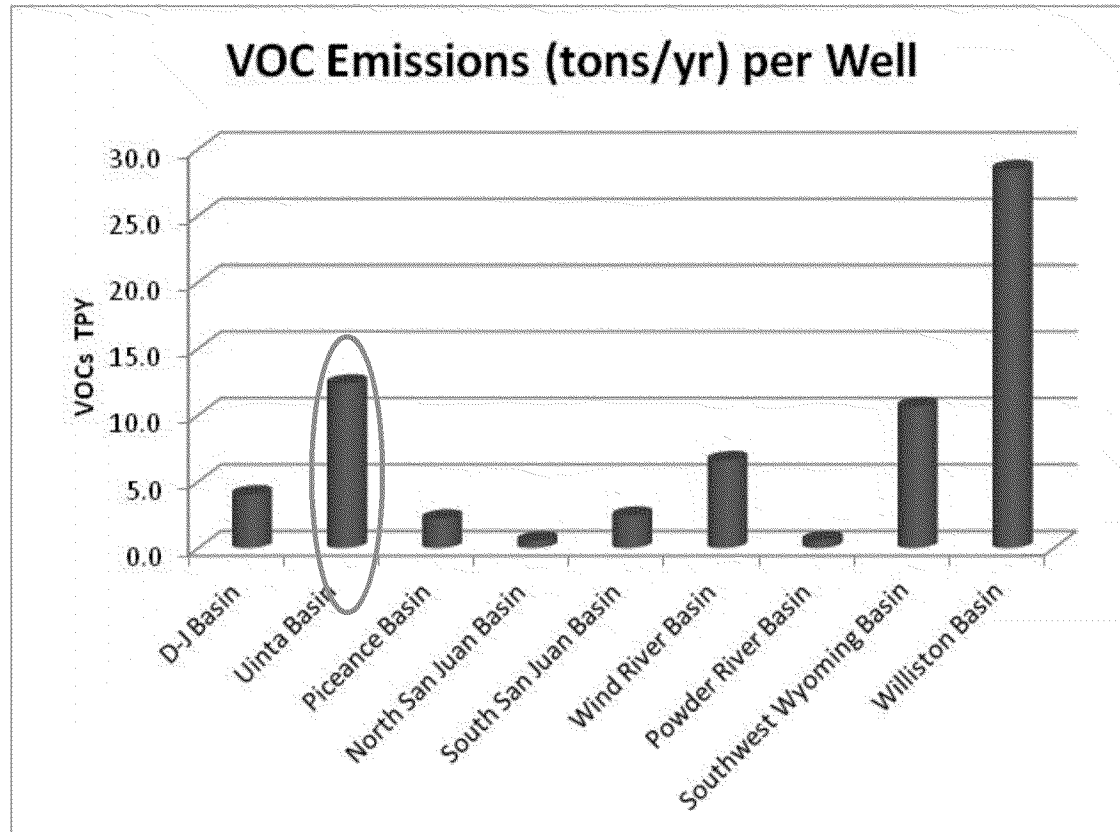
OBJECTIVES - PLANS

#8 Identify **data** metrics to trend air quality and EPA work efforts

- a) Agree on Indian country definition for purposes of data analysis and emission inventory accounting - *Varilek*
- b) Estimate emission reductions already achieved that are beyond regulatory requirements on sources in Indian country - *Beeler*
 - EPA CAA settlements
 - NEPA COAs
- c) Lobby OAR/OAQPS for requirement for Minor Source registrations to include US Well ID - *Videtich?*
- d) Locate data on gas flaring and lease fuel gas use to inform emission inventory – *Wieber, Beeler*
- e) Develop metric that indicates emissions per unit of production

Emission Differences by Basin

(WRAP Phase III)

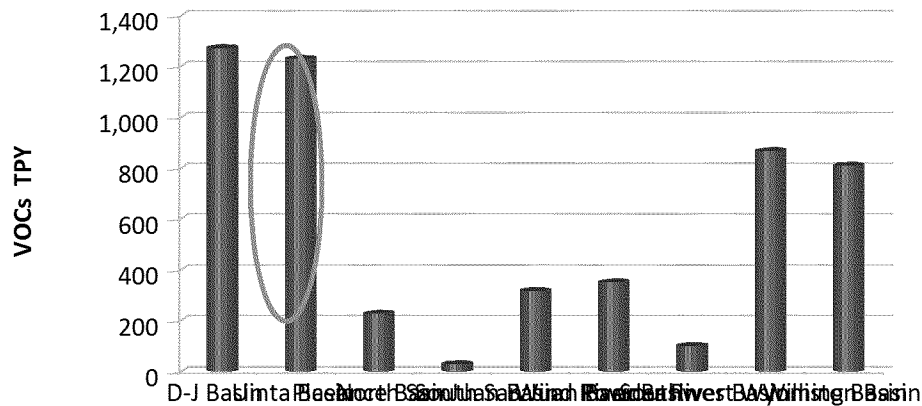


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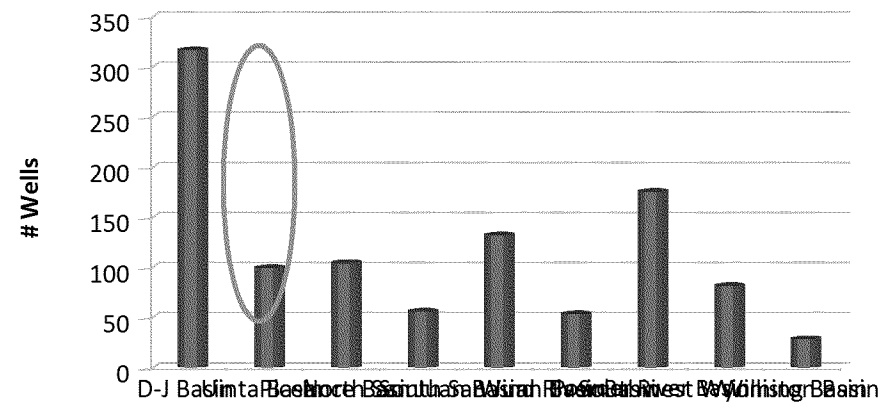
Emission Differences by Basin

(WRAP Phase III)

VOC Emissions (tons/yr) per MMBOE



Wells per MMBOE



For Internal Use Only

GOALS

- Understand life cycle/approaches for water acquisition and management for oil and gas development activities to protect water resources in the UB.
- Ensure drinking water is protected and safe for public and private water users in the UB.
- Ensure surface water and wetland resources are protected.
- Ensure water resources and other significant features that are important to the Tribe and local communities receive priority consideration for protection.

OBJECTIVES

- #1** As a water program, identify and agree on current and potential future impacts to water resources posed by oil and gas development activities.
- #2** Identify current CWA, SDWA, OPA and NEPA regulatory and non-regulatory activities underway in the basin including permits issued, permit conditions and resulting impacts/improvements to water quality.
- #3** Identify gaps in regulations and non-regulatory approaches to address current and prevent future water resource impacts
- #4** Identify the interests/issues/concerns of all stakeholders (State, Tribe, EPA and other Federal agencies, Industry, Citizens, NGOs, etc) and seek opportunities to influence/affect outcomes with the best mutual benefit to achieve desired outcome of environmentally protective energy development.
- #5** Build and implement an integrated water plan to protect water resources in the UB.
- #6** Develop approaches to monitor, evaluate and report progress in water resource protection.
- #7** Assure compliance with CWA/SDWA regulations.
- #8** Identify relevant data metrics to trend water quality, impacts, EPA work efforts and identify data gaps and how to fill.
- #9** Identify and engage partners in the UB.

DATA AVAILABLE

- A. EPA/UDEQ permits: NPDES, UIC, 404 (data gaps in permit info??)
[Data Steward – ???]
- B. UDEQ water quality standards, criteria, TMDLs
- C. FRP/SPCC? Facilities/volumes stored/proximity to water (FRP may be available, SPCC unknown and jurisdictional water may be an issue in portions of the basin)
- D. Monitoring and assessment data-evaluate completeness and need for additional to inform quality and use
- E. PWSS and intakes (lat/long data available, compliance and monitoring concerns-VOCs)

DATA AVAILABLE

- F. Sanitary Surveys, circuit rider reports, and drinking water quality data for tribal drinking water systems
- G. Source Water Assessments and areas delineated (R8 Source Water Assessment boundary)
- H. # PWS's identified as priority systems and # pre-priority PW systems
- I. UIC Disposal well locations and volume of water injected by year
- J. UIC EOR well locations and volume of water injected by year
- K. Data from Long-Term Water Resource Monitoring (West Tavaputts, Gasco, Greater Natural Buttes, Monument Butte)

DATA GAPS

- A. Produced water composition and volumes and how managed? (Do we have gaps in our knowledge? Do we need this information? Can we get it?)
- B. Water quality and 303d listed streams (no tribal WQS or listed streams in IC/State data and standards available).
- C. Monitoring and assessment data-evaluate completeness and need for additional to inform quality and use.
- D. Information on groundwater occurrence (nature and extent of aquifers), use, quality and vulnerability to contamination.
- E. Can we calculate number of facilities/permits/wells/discharge-injection volumes by company? (opportunities to leverage improvement/BMPs with potentially willing partners)

DATA GAPS

- F. Location and condition of private DW wells?
- G. Sanitary surveys and water quality data for state-regulated drinking water systems.
- H. Location, magnitude and impact of spills.

OBJECTIVES - STATUS

- #1** As a water program, identify and agree on current and potential future impacts to water resources posed by oil and gas development activities.
 - a) Evaluate available data to gain understanding of current state.

- #2** Identify current CWA, SDWA, OPA and NEPA regulatory and non-regulatory activities underway in the basin including permits issued, permit conditions and resulting impacts/improvements to water quality.
 - b) NPDES Permitting (OPRA)
 - Share info on any current permits issued and approaches for developing permit controls in the absence of approved WQS.
 - Stormwater?

 - b) UIC Permitting (OPRA)
 - Share info on current permits issued and protective measures/controls incorporated.

OBJECTIVES - STATUS

#2 Identify current CWA, SDWA, OPA and NEPA regulatory and non-regulatory activities (cont'd)

c) NEPA

- Share info on Oil and Gas projects including post ROD compliance activities

d) Drinking Water (OPRA)?

- Share info on current status of tribal water systems (surveys, water quality data)
- Information learned from technical assistance through circuit rider contract
- Tribal systems under compliance assistance plan – share/update status (ECEJ)
- Plans for capital improvements funded/coordinated through Indian Health Service

e) SRF (OPRA)?

f) SRF (OPRA)?

OBJECTIVES - STATUS

#3 Identify gaps in regulations and non-regulatory approaches to address current and prevent future water resource impacts)

a) CWA

- Lack of WQS for the U&O Reservation

b) NEPA

- Work with federal partners and interested stakeholders to achieve comprehensive and appropriate NEPA coverage (i.e. EIS vs EA) for oil and gas projects in the UB.

OBJECTIVES - STATUS

#4 Identify the interests/issues/concerns of all stakeholders (State, Tribe, EPA, Industry, Citizens, NGOs, etc.) and seek opportunities to influence/affect outcomes with the best mutual benefit to achieve desired outcome of environmentally protective energy development

a) EP Activities

- Monitoring and assessment CWA 106 Tribal Capacity Building - early stages of activity [*Kleeman*]
- SWAP for Tribal PWSS- delineations done and contaminant sources identified [*Russell and OPRA DW*]
- Ground water protection for private wells e.g. technical support to Vernal on Sole Source Aquifer Designation – phosphate mine [*Russell*]
- Private drinking water well monitoring for potability concerns (limited sampling planned for 2015) [*Kleeman/Russell*]
- Uinta Basin Groundwater Collaborative examining reuse of produced water [*Pfeiffer/Russell*]

OBJECTIVES - STATUS

#5 Develop approaches to monitor, evaluate and report progress in water resource protection

- a) Evaluate existing data and report progress (e.g. permits, other reg data, water quality monitoring, etc).
- b) Incorporate tribal capacity building activities including monitoring data collection into reporting metrics.
- c) Develop, as appropriate and pending resource availability, future monitoring strategy for the basin to provide a comprehensive understanding of impacts and vulnerabilities for water resources in the UB incorporating tribal, local, EPA interests (e.g. based on historical information, data gaps identified, future development plans as understood from NEPA/other information)

OBJECTIVES - STATUS

#6 Assure compliance with CWA/SDWA regulations

- a) Jurisdictional assessment focusing on surface/subsurface determinations [*Beeler*] to assist in permitting and enforcement actions [*OPRA/ORC*].
- b) Drinking Water (OPRA)
 - Identify compliance and monitoring issues for tribal PWSS and strategy for addressing
- c) Water Enforcement (ECEJ)
 - Provide historical water inspections/enforcement activities including past metrics and environmental outcomes (e.g. pounds pollution reduced).
 - Share future inspection strategies for the UB.

OBJECTIVES – PLANS

- #1** As a water program, identify and agree on current and potential future impacts to water resources posed by oil and gas development activities.
- a) Use available data and identified data gaps to determine greatest threats to water resources.
 - b) Develop options to resolve/reduce threats.
 - c) Potential Internal Activities
 - Share data and program work current and planned-look for synergies/opportunities
 - Understand and share lessons learned
 - SWAP analysis confirmed internally with EP, DW and ORC coordination
 - Develop best practices to address concerns/issues/impacts (existing regulatory framework may not apply to current industry practices i.e. horizontal drilling was not contemplated when initial UIC regs were developed)
 - Develop meaningful outcome measures where needed to evaluate success..

OBJECTIVES - PLANS

#2 Identify current CWA, SDWA, OPA and NEPA regulatory and non-regulatory activities underway in the basin including permits issued, permit conditions and resulting impacts/improvements to water quality.

a) NPDES Permitting (OPRA)

- Without approved WQS and identified impaired waters it is difficult to issue stormwater permits for oil and gas activities in light of the Energy Policy Act of 2005
 - Explore (reg and non-reg) opportunities to advance surface water protection from stormwater discharges

b) UIC Permitting (OPRA)

- Difficult to keep up with requests for disposal well permits which might result in industry seeking alternative disposal methods such as surface pits. Are there opportunities to gain efficiencies in permit actions/lean?

OBJECTIVES - PLANS

#2 Identify current CWA, SDWA, OPA and NEPA regulatory and non-regulatory activities (cont'd).

c) NEPA

- Track water protection measures and water monitoring established beyond regulations, required in signed RODs. See Table 4.
- Continue to provide input to NEPA on Oil and Gas projects including post ROD compliance activities [*Schmit*]
- Evaluate effectiveness of NEPA input in advancing environmental protection outcomes through evaluation of compliance with ROD conditions, etc.

d) Drinking Water (OPRA)?

Without engagement of tribal government, we have had a difficult time getting any traction for action on any SDWA violations. New violations continue to occur.

- Consider strategy for engagement based on results of CAP call?
- Continue to offer circuit rider assistance.

OBJECTIVES - PLANS

- #2** Identify current CWA, SDWA, OPA and NEPA regulatory and non-regulatory activities (cont'd).
- e) SRF (OPRA)?
 - f) OPA (EPR)?
 - g) Water Quality 106 [*Kleeman, Spence*] - Continue to provide assistance to tribe for monitoring.
 - h) Drinking water protection
 - Finalize SWAPs and begin process of sharing with tribe
 - Develop SWP plans for tribal systems
 - Project with R8 lab to sample private drinking water for area of concern
 - i) Compile water protection or monitoring required beyond regulations via EPA SWA and SDWA settlements in UB.

OBJECTIVES - PLANS

- #3** Identify gaps in regulations and non-regulatory approaches to address current and prevent future water resource impacts)
 - a) Understand produced water management approaches utilized in the UB and identify potential alternative approaches, in coordination with tribe, state, locals, industry that achieve environmental protection goals.

- #4** Identify the interests/issues/concerns of all stakeholders (State, Tribe, EPA, Industry, Citizens, NGOs, etc.) and seek opportunities to influence/affect outcomes with the best mutual benefit to achieve desired outcome of environmentally protective energy development
 - a) Water Quality Protection (EPR): serve as a resource for the Tribe and assist in capacity building as related to water resources and protection to further activities listed under status and develop future areas of focus in coordination/collaboration with stakeholders.

OBJECTIVES - PLANS

#4 Identify the interests/issues/concerns of all stakeholders (cont'd)

b) Potential External Activities

- Seek to develop trust and build relationships with our partners state/fed/industry (how do we do this, what is in it for them?)
- Encourage state/fed/industry partnerships
- Identify priority and opportune activities where Senior Management engagement and advocacy with external stakeholders is important to achieving our goals in the UB.
- Educate and increase engagement of tribal leadership on water issues (Tribal Council and Environmental Director)
- Explore technical issues/overlapping areas/perspectives and potential barriers
- Gain understanding of new/emerging and their effect on water resources (with industry partners?)
- Gain understanding of cost/performance information and opportunities/barriers water resource management (with industry partners?)

OBJECTIVES - PLANS

- #5** Develop approaches to monitor, evaluate and report progress in water resource protection
- a) Incorporate tribal capacity building activities and resultant data collection into reporting metrics.
 - b) Implement, as appropriate and pending resource availability, future monitoring strategy for the basin to provide a comprehensive understanding of impacts and vulnerabilities for water resources in the UB incorporating tribal, local, EPA interests (e.g. based on historical information, data gaps identified, future development plans as understood from NEPA/other information)

OBJECTIVES - PLANS

#6 Assure compliance with CWA/SDWA regulations

- a) Continue jurisdictional assessment focusing on surface/subsurface determinations to assist in permitting enforcement actions (OPRA/ECEJ/ORC).
- b) Drinking Water (OPRA)
 - Assist ECEJ, as needed, to track compliance with the CAP
 - Continue to provide technical assistance and circuit rider site visits
- c) Water Enforcement (ECEJ)
 - Share future inspection strategies in the UB and consider alignment with other water related activities and identified water resource impacts/vulnerabilities.
 - Track compliance with the CAP for tribal PWSs.

PROTECT: LAND
??

NEPA
Vaughan

GOALS

- OSTs ... ?
- Challenges associated with reclamation of disturbed soils in the arid climate of the Uinta Basin
- Major crude oil transport projects underway or in planning stages (Uinta Express Pipeline, Uinta Basin Rail project)?

OBJECTIVES

- #1** Ensure appropriate determination of the Bevill status of the processes and waste management procedures on oil shale and tar sands (OSTS) projects.
- #2** Evaluate safeguards to prevent future legacy issues from oil & gas development in UB.
- #3** Assure compliance with RCRA regulations
- #4** Identify relevant data metrics to trend solid waste generation and disposal, impacts, EPA work efforts and identify data gaps and how to fill.
- #5** The primary driver for reductions in surface disturbance for both BLM and BIA NEPA projects in the Uinta Basin comes from endangered cactus species (Uinta Basin Hookless Cactus and Pariette Hookless Cactus). Do we want to engage in any way with FWS to understand this issue better.

BUILD
Tribal Capacity
?

GOALS

• ...

BUILD

Tribal Capacity
?

OBJECTIVES

#1 ...

#2 ...

Internal -- Deliberative

BUILD
Tribal Capacity
?

DATA AVAILABLE

A.

BUILD

Tribal Capacity
?

DATA GAPS

A. ...

B. ...

Internal -- Deliberative